WHAT IS CLAIMED IS:

1. A method of fabrication of electrical contacts for molecular electronic transistors, comprising the steps of:

wiring a three-terminal molecule or an aggregate thereof to serve as an electronic transistor,

the electronic transistor comprising a gate electrode, a source electrode, and a drain electrode,

wherein the source electrode and the drain electrode are fabricated from a first previously-determined metal and the gate electrode is fabricated from a second previously-determined metal,

functioning to allow for simultaneous attachment of molecules to the source electrode, drain electrode, and gate electrode in a previously-determined order, for the creation enhanced integrated circuits

2. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 1, wherein the method is utilized in conjunction with mixed-valence transistors.

3. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 2, wherein the method utilizes a chemical means.

4. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 2, wherein the method utilizes a photochemical means.

5. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 2, wherein the method utilizes an electrochemical means.

6. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 1, wherein the electrode is of a material selected from the group consisting of platinum, gold, or other previously-determined metal.

7. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 1, wherein the method is utilized in conjunction with the source electrode, drain electrode, and gate electrode existing in one plane.

8. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 1, wherein the method is utilized in conjunction with two electrodes in one plane, and a third electrode in plane perpendicular thereto.

9. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 8, wherein the method is utilized in conjunction with the source electrode and drain electrode in one plane, and the gate electrode in a plane perpendicular thereto.

10. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 9, wherein molecules comprise specific alligator clips on source and drain terminals which can connect to a first metal, and further comprise a distinct alligator clip on a gate terminal which binds exclusively to a second metal.

11. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 10, wherein the molecules are attached to the source electrode, drain electrode, and gate electrode by self-assembly as neutral species.

12. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 10, wherein the molecules are attached to the source electrode, drain electrode, and gate electrode by self-assembly as charged species.

13. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 1, wherein the gate electrode is of a material selected from the group consisting of titanium, chrome, nickel, polysilicon, silicon, aluminum, tinoxide indium, tinoxide, and gallium arsenide.

14. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 1, wherein the source electrode is of a material selected from the group consisting of platinum, rhodium, silver, gold, and copper.

15. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 1, wherein the drain electrode is of a material selected from the group consisting of platinum, rhodium, silver, gold, and copper.

16. A method of fabrication of electrical contacts for molecular electronic transistors wherein:

a molecule is wired as a transistor by distinguishing between a source / drain metallurgy and a gate metallurgy, and by providing previously-determined alligator clips which function to direct the molecule toward a proper connection,

wherein the alligator clips on the source / drain chain are –SH groups, and the alligator clip on the gate chain is a phosphate group,

a metal-electrode pattern is provided on an insulating surface with gaps in previously-determined locations in which molecules belong,

wherein the size of each gap is tailored to fit a length of the molecule,

wherein the gate electrode is fabricated from aluminum, which couples specifically to the phosphate alligator clip on the molecule (gate chain), and the source / drain electrodes are fabricated from platinum, which couples to the –SH alligator clips on the corresponding chain,

a surface containing the electrode pattern then immersed in a solution containing the molecules, functioning to allow self-assembly to occur spontaneously.

17. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 16, wherein a molecule is prepared in a doubly-oxidized state, with two electrons missing, and the electrochemistry step is that of reduction; as a negative voltage is applied.

18. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 16, wherein the method utilizes photochemical oxidation, and the chip is immersed in a concentrated solution containing molecules, followed by rinsing, and the circuit is immersed in carbon tetrachloride and irradiated with UV radiation to form a mixed-valence state.

19. The method of fabrication of electrical contacts for molecular electronic transistors as described in claim 16, the molecule is provided with two –SH terminal groups functioning as alligator clips, an electrode pattern is provided on an insulating surface with gaps in locations where the molecules belong, the source / drain electrodes are fabricated from gold, the gate electrodes are fabricated from aluminum, the surface containing the electrode pattern is immersed in a solution containing the molecules, functioning to allow self-assembly to occur spontaneously.